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EXAMINER

GOFF II, JOHN L

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,009

Applicant(s)

SHAH, PANKAJ VINUBHAI

Examiner

John L. Goff

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 7/8/05.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1 and 3(1) are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs (U.S. Patent 5,194,487).

Jacobs discloses a method for forming a moisture reactive adhesive. Jacobs teaches a first step of reacting first components including a high molecular weight polyol (e.g. a polyester polyol) having a molecular weight in the range of 400-6,000, a low molecular weight polyol (e.g. polyester polyol) have a molecular weight less than 400, and a polyisocyanate in an OH:NCO ratio (i.e. isocyanate reactive group to isocyanate group ratio) of 1.1-4.1 to form a hydroxyl-functional prepolymer (Column 3, lines 12-68 and Column 4, lines 1-15 and 32-68 and Column 5, lines 1-14 and 41-50 and Column 8, lines 25-33). Jacobs teaches a second step of admixing second components including the prepolymer, additional polyisocyanate, and additional polyol (e.g. polyether polyol), the polyol in amounts of 2 to 20% by weight, in an NCO:OH ratio of 0.8-6 and allowing the admixture to react and form a moisture reactive adhesive, it being noted the moisture reactive adhesive taught by Jacobs is capable of melting as the moisture reactive adhesive is consistent and in agreement with the hot melt adhesive disclosed and claimed by applicants (Column 2, lines 40-60 and Column 11, lines 24-30 and the Examples). Jacobs

Art Unit: 1733

further teaches solvent may be added to the moisture reactive adhesive to form an aqueous dispersion that can be applied according to the techniques set forth in Markusch (U.S. Patent 4,408,008).

Regarding the particular values claimed for the polyol molecular weight, OH:NCO ratio of the first components, weight ratio of prepolymer to additional polyol, and NCO:OH ratio of the second components, the ranges suggested by Jacobs fully encompass or substantially overlap the claimed ranges such that these values appear intrinsic to Jacobs. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine these values as a function of the desired end properties of the moisture reactive adhesive produced as doing so would have required nothing more than ordinary skill and routine experimentation.

4. Claims 2 and 3(2) are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs as applied to claims 1 and 3(1) above, and further in view of Graham (U.S. Patent 6,365,700).

Jacobs as applied above teaches all of the limitations in claims 2 and 3(2) except for a specific teaching of using crystalline polyester polyol as the polyol of the second components, it being noted Jacobs is not limited to any particular polyol and specifically suggests using polyols including diols such as ethylene glycol, propylene glycol, butanediol, etc. (i.e. diols incorporated into polyester polyols) in addition to a specific suggestion of polyether polyol (Column 2, lines 40-60). It would have been well within the purview of one of ordinary skill in the art at the time the invention was made to use as the polyol of the second components taught by Jacobs a crystalline polyester polyol as both crystalline polyester polyol and polyether polyol were

Art Unit: 1733

equivalent alternatives in the art as shown for example by Graham and only the expected results would be achieved.

Graham discloses a method for forming a moisture reactive hot melt adhesive (Column 1, lines 21-29). Graham teaches a first step of reacting first components including a polyol (e.g. a polyester polyol) having a molecular weight in the range of 2,000-15,000 and a polyisocyanate in an NCO:OH ratio of 0.7-1.4 to form a hydroxyl-functional prepolymer (Column 1, lines 61-67 and Column 2, lines 7-9, 14-16, 37-39, 44-46, and 49-53). Graham teaches a second step of admixing second components including the prepolymer, additional polyol (e.g. crystalline polyester polyol or polyether polyol) in amounts of 30-60% prepolymer and 5-70% additional polyol, and additional polyisocyanate in an NCO:OH ratio of 1.2-3 and allowing the admixture to react (Column 3, lines 29-34, 38-46, and 51-62). Graham teaches the moisture reactive hot melt adhesive is used to bond a variety of substrates (Column 1, lines 26-29).

5. Claims 4(1) and 4(2) are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs as applied to claims 1 and 3(1) above (and Jacobs and Graham as applied to claims 2 and 3(2) above), and further in view of Hansel et al. (U.S. Patent 5,162,457).

Jacobs and Graham as applied above teach all of the limitations in claims 4(1) and 4(2) except for a specific teaching of applying the moisture reactive adhesive as a hot melt and using the moisture reactive adhesive as a bonding agent. As noted above, Jacobs suggests applying the moisture reactive adhesive in an aqueous dispersion. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the moisture reactive adhesive taught by Jacobs (and Jacobs as modified by Graham) as a hot melt as it was preferable in the art to apply adhesives of this type as a hot melt as opposed to an aqueous dispersion to

Art Unit: 1733

avoid the expense/time associated with drying the aqueous component as shown by Hansel et al. Additionally, it would have been well within the purview of one of ordinary skill in the art at the time the invention was made to use the adhesive taught by Jacobs (and Jacobs as modified by Graham) as a bonding agent for adhering two substrates as this was a well known and conventional use for compositions of this type as shown for example by Hansel et al. Regarding the specific hot melt temperature, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the hot melt temperature taught by Jacobs as modified by Hansel et al. (and Jacobs as modified by Graham and Hansel et al.) as a function of the particular adhesive composition as doing so would have required nothing more than ordinary skill and routine experimentation.

Hansel et al. disclose a method for forming a two-component, moisture reactive, isocyanate group containing hot melt adhesive substantially similar to that taught by Jacobs (See abstract). Hansel et al. teach the adhesive is applied as a hot melt rather than as an aqueous dispersion to avoid the expense/time associated with drying the aqueous component (Column 1, lines 9-16). Hansen et al. further teach the adhesive is used as a bonding agent applied as a hot melt and cured through moisture of the atmosphere or from the application of water (Column 5, lines 18-35).

Response to Arguments

6. Applicant's arguments filed 7/8/05 have been fully considered but they are not persuasive.

Regarding claims 1 and 3(1) applicant argues, "Jacobs discloses no such teaching about bonding two substrates together anywhere in its disclosure, but discloses the following in Column 11, lines 34-44:".

Claim 1 and 3(1) are directed to a specific polymer composition and as such the claims are not commensurate in scope with this argument. Further, Jacobs is combined with Hansel et al. to provide motivation for using the adhesive composition of Jacobs as a bonding agent.

Regarding claims 1 and 3(1) applicant further argues, "First, neither components of Jacobs composition can be combined with Applicants hot melt adhesive nor a blend of Jacobs composition can be combined with Applicants hot melt adhesive.".

Claims 1 and 3(1) are rejected over Jacobs. Jacobs is not combined with applicants invention.

Regarding claims 1 and 3(1) applicant further argues, "Second, a high gloss polyurethane coating prepared from an aqueous dispersion is not equivalent to a moisture cured hot melt adhesive used to bond two or more substrates together forming a polyurethane according to the inventor and persons of average skill in the art.".

Claims 1 and 3(1) require forming a specific polymer composition. The polymer composition taught by Jacobs is the same as that claimed such that either composition could be considered a coating or an adhesive as both would function accordingly.

Regarding claims 1 and 3(1) applicant further argues, "Third, Applicants respectfully submit Examiner has not met his burden of establishing prima facie case of obviousness by pointing out any teaching or suggestion within Jacobs to modify Jacobs high gloss coating to transform it to a useful adhesive for bonding two or more substrates together.".

Art Unit: 1733

Claim 1 and 3(1) are directed to a specific polymer composition and as such the claims are not commensurate in scope with this argument. Further, Jacobs is combined with Hansel et al. to provide motivation for using the composition of Jacobs as a bonding agent.

Regarding claims 2 and 3(2) applicant argues, "With all due respect, Examiner cannot pick and choose a crystalline polyester polyol of Graham and combine it with Jacobs composition. Since Jacobs compositions are incompatible with Applicants moisture cured hot melt adhesive, there is no motivation to combine references."

Jacobs is combined with Graham to provide motivation for using a crystalline polyester polyol as opposed to the polyether polyol suggested by Jacobs as both are functionally equivalent as shown by Graham.

Regarding claims 4(1) and 4(2) applicant argues, "Moreover, there is no motivation to combine a hot melt of Hansel with an aqueous polyurethane dispersion that produces a high gloss coating in Jacobs."

Jacobs is combined with Hansel et al. wherein Hansel et al. is merely exemplary of the conventional use of an adhesive composition of the same type as Jacobs as a bonding agent for adhering two substrates.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1733

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is (571) 272-1216. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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